

SEQUENCE LISTING

<110> West, Robert R.
Sheppard, Paul O.
Fox, Brian A.

<120> Peptide and Polypeptide Inhibitors of Complement C1s

<130> 00-33

<160> 140

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 122

<212> PRT

<213> Haementaria ghilianii

<400> 1

Ala 1	Lys	Lys	Lys	Leu 5	Pro	Lys	Cys	Gln	Lys 10	Gln	Glu	Asp	Cys	Gly 15	Ser
Trp	Asp	Leu	Lys 20	Cys	Asn	Asn	Val	Thr 25	Lys	Lys	Cys	Glu	Cys 30	Arg	Asn
Gln	Val	Cys 35	Gly	Arg	Gly	Cys	Pro 40	Lys	Glu	Arg	Tyr	Gln 45	Arg	Asp	Lys
Tyr	Gly 50	Cys	Arg	Lys	Cys	Leu 55	Cys	Lys	Gly	Cys	Asp 60	Gly	Phe	Lys	Cys
Arg 65	Leu	Gly	Cys	Thr 70	Tyr	Gly	Phe	Lys	Thr 75	Asp	Lys	Lys	Gly	Cys	Glu 80
Ala	Phe	Cys	Thr	Cys 85	Asn	Thr	Lys	Glu	Thr 90	Ala	Cys	Val	Asn 95	Ile	Trp
Cys	Thr	Asp	Pro 100	Tyr	Lys	Cys	Asn	Pro 105	Glu	Ser	Gly	Arg	Cys 110	Glu	Asp
Pro	Asn	Glu 115	Glu	Tyr	Glu	Tyr	Asp 120	Tyr	Glu						

 $\langle 210 \rangle$ 2

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide

<400> 2

Pro Asn Glu Glu Tyr Glu Tyr Asp Tyr Glu
1 5 10

<210> 3

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide

<221> MUTAGEN

$\langle 222 \rangle \quad (5) \dots (5)$

<223> Xaa = Phe- (p-CH₂) SO₃H

<400> 3

 $\langle 210 \rangle$ 4

$\langle 211 \rangle$ 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide

<221> MUTAGEN

<222> (7) . . . (7)

<223> Xaa = Phe- (p-CH₂) SO₃H

<400> 4

<210> 5

$\langle 211 \rangle$ 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide

<221> MUTAGEN

 $\langle 222 \rangle \quad (9) \dots (9)$

<223> Xaa = Phe- (p-CH₂) SO₃H

<400> 5

<210> 6

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide

<221> MUTAGEN

 $\langle 222 \rangle \quad (5) \dots (5)$

<223> Xaa = Phe- (p-CH₂) SO₃H

<221> MUTAGEN

<222> (7) . . . (7)

<223> Xaa = Phe- (p-CH₂) SO₃H

<400> 6

<210> 7

<211> 10

<212> PRT

<213> Artificial Sequence

<220>
<223> Polypeptide

<221> MUTAGEN
<222> (5) ... (5)
<223> Xaa = Phe- (p-CH₂) SO₃H

<221> MUTAGEN
<222> (9) ... (9)
<223> Xaa = Phe- (p-CH₂) SO₃H

<400> 7
Pro Asn Glu Glu Xaa Glu Tyr Asp Xaa Glu
1 5 10

<210> 8
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Polypeptide

<221> MUTAGEN
<222> (7) ... (7)
<223> Xaa = Phe- (p-CH₂) SO₃H

<221> MUTAGEN
<222> (9) ... (9)
<223> Xaa = Phe- (p-CH₂) SO₃H

<400> 8
Pro Asn Glu Glu Tyr Glu Xaa Asp Xaa Glu
1 5 10

<210> 9
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Polypeptide

<221> MUTAGEN
<222> (5) ... (5)
<223> Xaa = Phe- (p-CH₂) SO₃H

<221> MUTAGEN
<222> (7) ... (0)
<223> Xaa = Phe- (p-CH₂) SO₃H

<221> MUTAGEN
<222> (9) ... (9)
<223> Xaa = Phe- (p-CH₂) SO₃H

<400> 9
Pro Asn Glu Glu Xaa Glu Xaa Asp Xaa Glu
1 5 10

<210> 10
<211> 10
<212> PRT

<400> 20

<400> 21

<400> 22

Pro Asn Glu Glu Tyr Glu Xaa Asp Xaa Glu
1 5 10

```
<210> 23
<211> 10
<212> PRT
<213> Artificial Sequence
```

<220>
<223> Polypeptide

```
<221> MUTAGEN
<222> (5) ... (5)
<223> Xaa = Phe-(p-CH2)SO3H
```

```
<221> MUTAGEN
<222> (7) ... (7)
<223> Xaa = Phe-(p-CH2)SO3H
```

```
<221> MUTAGEN
<222> (9)...(9)
<223> Xaa = sulfated tyrosine
```

Pro Asn Glu Glu Xaa Glu Xaa Asp Xaa Glu
1 5 10

```
<210> 24
<211> 10
<212> PRT
<213> Artificial Sequence
```

<220>
<223> Polypeptide

```
<221> MUTAGEN
<222> (5)...(5)
<223> Xaa = sulfated tyrosine
```

```
<221> MUTAGEN
<222> (7) ... (7)
<223> Xaa = Phe-(p-CH2)SO3H
```

```
<221> MUTAGEN
<222> (9) ... (9)
<223> Xaa = Phe-(p-CH2)SO3H
```

Pro Asn Glu Glu Xaa Glu Xaa Asp Xaa Glu
1 5 10

```
<210> 25
<211> 10
<212> PRT
<213> Artificial Sequence
```

<220>
<223> Polypeptide

```
<221> MUTAGEN
<222> (5) ... (5)
<223> Xaa = Phe- (p-CH2) SO3H
```

<221> MUTAGEN


```
<222> (7)...(7)
<223> Xaa = sulfated tyrosine
```

<400> 25
 Pro Asn Glu Glu Xaa Glu Xaa Asp Xaa Glu
 1 5 10

<220>
<223> Polypeptide

```
<221> MUTAGEN
<222> (7)...(7)
<223> Xaa = sulfated tyrosine
```

```
<221> MUTAGEN
<222> (9) ... (9)
<223> Xaa = Phe- (p-CH2) SO3H
```

Pro Asn Glu Glu Xaa Glu Xaa Asp Xaa Glu
1 5 10

```
<220>
<223> Polypeptide
```

```
<221> MUTAGEN
<222> (7)...(7)
<223> Xaa = sulfated tyrosine
```

```
<221> MUTAGEN
<222> (9) ... (9)
<223> Xaa = Phe-(p-CH2)SO3H
```

Pro Asn Glu Glu Xaa Glu Xaa Asp Xaa Glu
1 5 10

<213> Artificial Sequence

<220>

<223> Polypeptide

<221> MUTAGEN

<222> (5) ... (5)

<223> Xaa = Phe- (p-CH₂) SO₃H

<400> 28

Ala Asn Glu Asp Xaa Glu Asp Tyr Glu Tyr Asp
1 5 10

<210> 29

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide

<221> MUTAGEN

<222> (8) ... (8)

<223> Xaa = Phe- (p-CH₂) SO₃H

<400> 29

Ala Asn Glu Asp Tyr Glu Asp Xaa Glu Tyr Asp
1 5 10

<210> 30

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide

<221> MUTAGEN

<222> (10) ... (10)

<223> Xaa = Phe- (p-CH₂) SO₃H

<400> 30

Ala Asn Glu Asp Tyr Glu Asp Tyr Glu Xaa Asp
1 5 10

<210> 31

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide

<221> MUTAGEN

<222> (5) ... (5)

<223> Xaa = Phe- (p-CH₂) SO₃H

<221> MUTAGEN

<222> (8) ... (8)

<223> Xaa = Phe- (p-CH₂) SO₃H

<400> 31


```

<222> (5)...(5)
<223> Xaa = sulfated tyrosine

<221> MUTAGEN
<222> (8)...(8)
<223> Xaa = sulfated tyrosine

<400> 38
Ala Asn Glu Asp Xaa Glu Asp Xaa Glu Tyr Asp
 1           5           10

<210> 39
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Polypeptide

<221> MUTAGEN
<222> (5)...(5)
<223> Xaa = sulfated tyrosine

<221> MUTAGEN
<222> (10)...(10)
<223> Xaa = sulfated tyrosine

<400> 39
Ala Asn Glu Asp Xaa Glu Asp Tyr Glu Xaa Asp
 1           5           10

<210> 40
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Polypeptide

<221> MUTAGEN
<222> (8)...(8)
<223> Xaa = sulfated tyrosine

<221> MUTAGEN
<222> (10)...(10)
<223> Xaa = sulfated tyrosine

<400> 40
Ala Asn Glu Asp Tyr Glu Asp Xaa Glu Xaa Asp
 1           5           10

<210> 41
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Polypeptide

<221> MUTAGEN
<222> (5)...(5)
<223> Xaa = sulfated tyrosine

```

```
<221> MUTAGEN
<222> (10)...(10)
<223> Xaa = sulfated tyrosine
```

```
<210> 42
<211> 11
<212> PRT
<213> Artificial Sequence
```

```
<221> MUTAGEN
<222> (5) ... (5) .
<223> Xaa = Phe-(p-CH2)SO3H
```

```
<221> MUTAGEN
<222> (8)...(8)
<223> Xaa = sulfated tyrosine
```

```
<210> 43
<211> 11
<212> PRT
<213> Artificial Sequence
```

<220>
<223> Polypeptide

```
<221> MUTAGEN
<222> (5)...(5)
<223> Xaa = sulfated tyrosine
```

```
<221> MUTAGEN
<222> (8) ... (8)
<223> Xaa = Phe-(p-CH2)SO3H
```

```
<210> 44
<211> 11
<212> PRT
<213> Artificial Sequence
```

<220>
<223> Polypeptide

<221> MUTAGEN

```
<221> MUTAGEN
<222> (10)...(10)
<223> Xaa = sulfated tyrosine
```

```
<210> 45
<211> 11
<212> PRT
<213> Artificial Sequence
```

```
<221> MUTAGEN
<222> (5)...(5)
<223> Xaa = sulfated tyrosine
```

```
<221> MUTAGEN
<222> (10) ... (10)
<223> Xaa = Phe-(p-CH2)SO3H
```

```
<210> 46
<211> 11
<212> PRT
<213> Artificial Sequence
```

```
<221> MUTAGEN
<222> (8) . . . (8)
<223> Xaa = Phe- (p-CH2) SO3H
```

```
<221> MUTAGEN
<222> (10)...(10)
<223> Xaa = sulfated tyrosine
```

```
<210> 47
<211> 11
<212> PRT
<213> Artificial Sequence
```

```
<221> MUTAGEN
<222> (8)...(8)
<223> Xaa = sulfated tyrosine
```

<221> MUTAGEN
 <222> (10)...(10)
 <223> Xaa = Phe- (p-CH₂) SO₃H

<400> 47
 Ala Asn Glu Asp Tyr Glu Asp Xaa Glu Xaa Asp
 1 5 10

<210> 48
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<221> MUTAGEN
 <222> (5)...(5)
 <223> Xaa = Phe- (p-CH₂) SO₃H

<221> MUTAGEN
 <222> (8)...(8)
 <223> Xaa = Phe- (p-CH₂) SO₃H

<221> MUTAGEN
 <222> (10)...(10)
 <223> Xaa = sulfated tyrosine

<400> 48
 Ala Asn Glu Asp Xaa Glu Asp Xaa Glu Xaa Asp
 1 5 10

<210> 49
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<221> MUTAGEN
 <222> (5)...(5)
 <223> Xaa = sulfated tyrosine

<221> MUTAGEN
 <222> (8)...(8)
 <223> Xaa = Phe- (p-CH₂) SO₃H

<221> MUTAGEN
 <222> (10)...(10)
 <223> Xaa = Phe- (p-CH₂) SO₃H

<400> 49
 Ala Asn Glu Asp Xaa Glu Asp Xaa Glu Xaa Asp
 1 5 10

<210> 50
 <211> 11
 <212> PRT
 <213> Artificial Sequence

160430 : 666666

<210> 70
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<400> 70
 Gly Cys Asp Gly Phe Lys Ser Arg Leu Gly Cys Thr Tyr Gly Phe Lys
 1 5 10 15
 Thr Asp Lys Lys Gly Cys Glu Ala Phe Ser Thr Ser Asn Thr
 20 25 30

<210> 71
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<400> 71
 Gly Ser Asp Gly Phe Lys Cys Arg Leu Gly Cys Thr Tyr Gly Phe Lys
 1 5 10 15
 Thr Asp Lys Lys Gly Cys Glu Ala Phe Cys Thr Cys Asn Thr
 20 25 30

<210> 72
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<400> 72
 Gly Cys Asp Gly Phe Lys Cys Arg Leu Gly Ser Thr Tyr Gly Phe Lys
 1 5 10 15
 Thr Asp Lys Lys Gly Cys Glu Ala Phe Cys Thr Cys Asn Thr
 20 25 30

<210> 73
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<400> 73
 Gly Cys Asp Gly Phe Lys Cys Arg Leu Gly Cys Thr Tyr Gly Phe Lys
 1 5 10 15
 Thr Asp Lys Lys Gly Ser Glu Ala Phe Cys Thr Cys Asn Thr
 20 25 30

<210> 74
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Polypeptide

<400> 74

Gly	Cys	Asp	Gly	Phe	Lys	Cys	Arg	Leu	Gly	Cys	Thr	Tyr	Gly	Phe	Lys
1				5					10					15	
Thr	Asp	Lys	Lys	Gly	Cys	Glu	Ala	Phe	Cys	Thr	Ser	Asn	Thr		
			20					25					30		

<210> 75

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide

<400> 75

Gly	Ser	Asp	Gly	Phe	Lys	Cys	Arg	Leu	Gly	Ser	Thr	Tyr	Gly	Phe	Lys
1				5					10					15	
Thr	Asp	Lys	Lys	Gly	Cys	Glu	Ala	Phe	Cys	Thr	Cys	Asn	Thr		
			20					25					30		

<210> 76

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide

<400> 76

Gly	Ser	Asp	Gly	Phe	Lys	Cys	Arg	Leu	Gly	Cys	Thr	Tyr	Gly	Phe	Lys
1				5					10					15	
Thr	Asp	Lys	Lys	Gly	Ser	Glu	Ala	Phe	Cys	Thr	Cys	Asn	Thr		
			20					25					30		

<210> 77

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide

<400> 77

Gly	Ser	Asp	Gly	Phe	Lys	Cys	Arg	Leu	Gly	Cys	Thr	Tyr	Gly	Phe	Lys
1				5					10					15	
Thr	Asp	Lys	Lys	Gly	Cys	Glu	Ala	Phe	Cys	Thr	Ser	Asn	Thr		
			20					25					30		

<210> 78

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide

<400> 78

Gly	Cys	Asp	Gly	Phe	Lys	Cys	Arg	Leu	Gly	Ser	Thr	Tyr	Gly	Phe	Lys
1				5					10					15	

<400> 87
 Gly Cys Asp Gly Phe Lys Cys Arg Leu Gly Cys Thr Tyr Gly Phe Lys
 1 5 10 15
 Thr Asp Lys Lys Gly Ser Glu Ala Phe Cys Thr Cys Asn Thr
 20 25 30

<210> 88
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<400> 88
 Gly Cys Asp Gly Phe Lys Cys Arg Leu Gly Cys Thr Tyr Gly Phe Lys
 1 5 10 15
 Thr Asp Lys Lys Gly Cys Glu Ala Phe Ser Thr Cys Asn Thr
 20 25 30

<210> 89
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<400> 89
 Gly Ser Asp Gly Phe Lys Ser Arg Leu Gly Cys Thr Tyr Gly Phe Lys
 1 5 10 15
 Thr Asp Lys Lys Gly Cys Glu Ala Phe Cys Thr Cys Asn Thr
 20 25 30

<210> 90
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<400> 90
 Gly Ser Asp Gly Phe Lys Cys Arg Leu Gly Cys Thr Tyr Gly Phe Lys
 1 5 10 15
 Thr Asp Lys Lys Gly Ser Glu Ala Phe Cys Thr Cys Asn Thr
 20 25 30

<210> 91
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<400> 91
 Gly Ser Asp Gly Phe Lys Cys Arg Leu Gly Cys Thr Tyr Gly Phe Lys
 1 5 10 15
 Thr Asp Lys Lys Gly Cys Glu Ala Phe Ser Thr Cys Asn Thr
 20 25 30

0090373:05400

<210> 116
 <211> 23
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<400> 116
 Cys Arg Leu Gly Cys Thr Tyr Gly Phe Lys Thr Asp Lys Lys Gly Cys
 1 5 10 15
 Glu Ala Phe Cys Thr Cys Asn
 20

<210> 117
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Peptide

<400> 117
 Leu Gln Arg Ala Leu Glu
 1 5

<210> 118
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<400> 118
 Leu Gln Arg Ala Leu Glu Ile Leu Pro Asn Arg Val Thr Ile Lys Ala
 1 5 10 15
 Asn Arg Pro Phe Leu Val Phe Ile
 20

<210> 119
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<400> 119
 Asn Glu Asp Tyr Glu Asp Tyr Glu Tyr Asp
 1 5 10

<210> 120
 <211> 23
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<400> 120

116 117 118 119 120

<222> (3)...(3)
 <223> Xaa = E or D

<221> VARIANT
 <222> (4)...(4)
 <223> Xaa = E or D

<400> 124
 Ala Leu Xaa Xaa Cys
 1 5

<210> 125
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Polypeptide

<400> 125
 Pro Asn Glu Glu Tyr Glu Tyr Glu Tyr Glu
 1 5 10

<210> 126
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Cls exosite binding moiety.

<221> VARIANT
 <222> (1)...(1)
 <223> Xaa = A or P

<221> VARIANT
 <222> (3)...(3)
 <223> Xaa = D or E

<221> VARIANT
 <222> (4)...(4)
 <223> Xaa = D or E

<221> MUTAGEN
 <222> (6)...(6)
 <223> Xaa = Phe-(p-CH₂)SO₃H

<221> MUTAGEN
 <222> (7)...(7)
 <223> Xaa = sulfated tyrosine

<221> MUTAGEN
 <222> (8)...(8)
 <223> Xaa = 2-sulfotyrosine

<221> VARIANT
 <222> (9)...(9)
 <223> Xaa = D or E

<221> VARIANT
 <222> (10)...(10)
 <223> Xaa = D or E

<222> (5)...(5)
 <223> Xaa = G, S, or T, or is absent

<221> VARIANT
 <222> (6)...(6)
 <223> Xaa = D or E

<221> VARIANT
 <222> (7)...(7)
 <223> Xaa = D or E

<400> 132
 Ala Leu Xaa Xaa Xaa Xaa Xaa
 1 5

<210> 133
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Linker.

<221> VARIANT
 <222> (1)...(1)
 <223> Xaa = G, S, or T

<221> VARIANT
 <222> (2)...(2)
 <223> Xaa = G, S, or T

<221> VARIANT
 <222> (3)...(3)
 <223> Xaa = G, S, or T

<221> VARIANT
 <222> (4)...(4)
 <223> Xaa = G, S, or T

<221> VARIANT
 <222> (5)...(5)
 <223> Xaa = G, S, or T, or is absent

<221> VARIANT
 <222> (6)...(6)
 <223> Xaa = G, S, or T, or is absent

<221> VARIANT
 <222> (7)...(7)
 <223> Xaa = G, S, or T, or is absent

<400> 133
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1 5

<210> 134
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Linker.

105150 202000

<222> (6)...(6)
 <223> Xaa = G, S, or T, or is absent

<221> VARIANT
 <222> (7)...(7)
 <223> Xaa = G, S, or T, or is absent

<400> 135
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1 5

<210> 136
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Linker.

<221> VARIANT
 <222> (3)...(3)
 <223> Xaa = D or E

<221> VARIANT
 <222> (4)...(4)
 <223> Xaa = D or E

<221> VARIANT
 <222> (5)...(5)
 <223> Xaa = G, S, or T

<221> VARIANT
 <222> (6)...(6)
 <223> Xaa = G, S, or T, or is absent

<400> 136
 Ala Leu Xaa Xaa Xaa Xaa Cys
 1 5

<210> 137
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Linker.

<221> VARIANT
 <222> (1)...(1)
 <223> Xaa = G, S, or T

<221> VARIANT
 <222> (2)...(2)
 <223> Xaa = G, S, or T

<221> VARIANT
 <222> (3)...(3)
 <223> Xaa = G, S, or T

<221> VARIANT

100150:22000

